



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,941	04/14/2004	Erich H. Wolf	70830.01	5284
22509	7590	09/21/2005	EXAMINER	
MICHAEL E. KLICPERA PO BOX 573 LA JOLLA, CA 92038-0573			OLSEN, KAJ K	
			ART UNIT	PAPER NUMBER
			1753	
DATE MAILED: 09/21/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/823,941

Applicant(s)

WOLF ET AL.

Examiner

Kaj K. Olsen

Art Unit

1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Double Patenting*

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-5, 7-23 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-21 of copending application 10/725,920 (hereafter "application '920"). Although the conflicting claims are not identical, they are not patentably distinct from each other.

3. Claims 1, 4, 5, 11, 13, 14, 22 and 23 of the instant invention appear to be identical to claims 1, 3, 4, 9, 11, 12, 20 and 21 of application '920 except for the use of "fluid" instead of "media". Although these terms do have differing scope, the term "fluid" of application '920 is fully encompassed by the term "media". Moreover, fluid would have been an obvious choice of ion conducting media because ion conducting fluid are readily available.

4. Claims 2 and 12 of the instant invention appear to be substantially identical to claims 2 and 10 of application '920 except for the inclusion of polysaccharide in the instant invention. However, claims 2 and 12 of the instant invention fully encompass claims 2 and 10 of application '920.

Art Unit: 1753

5. Claim 3 of the instant invention fully encompasses claim 2 of application '920 because claim 2 already recited the use of polymeric materials for the wick.
6. Claims 4 and 13 of the instant invention fully encompass claims 3 and 11 of application '920 because the cellulose is a polysaccharide.
7. The remaining dependent claims being rejected above appear to be identical to claims found in application '920.
8. Claims 25-28 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 9, 20 and 21 of copending application '920 in view of Glass et al (USP 5,306,414).
9. Application '920 set forth all the limitations of the claims, but did not explicitly claim a coating from the set forth Markush groupings. Glass teaches in an alternate pH sensor that hydrophilic coatings of polyacrylamides facilitate the wetting of the sensor with the sample solution. See col. 12, ll. 8-14. It would have been obvious to one of ordinary skill in the art at the time the invention was being made to utilize the teaching of Glass for the claimed sensor of application '920 so as to ensure the sample sufficiently wets the sensor.

This is a provisional obviousness-type double patenting rejection.

***Claim Rejections - 35 USC § 112***

10. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Art Unit: 1753

11. Claims 6, 24 and 29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

12. Claim 6 specifies that the ion conduction media is a conductive polymer. Applicant never discloses this in the specification. The only materials disclosed for the ion conducting media are fluids like NaCl and KCl solutions and applicant never disclosed the use of conductive polymers. See p. 10, ll. 24-31. One possessing ordinary skill in the art would not have known how to construct a sensor as set forth by claim 6 because one wouldn't have known what the "conductive polymer" is nor how to substitute that for the fluids described on p. 10, ll. 24-31. For the purpose of examination, the examiner will presume the applicant is referring to the polymerized (i.e. gelled) solutions based on polysaccharides, which the applicant does have support for, but clarification is requested.

13. Claim 24 is similarly to claim 11 but applicant appears to have reversed which elements are in which tubes (i.e. the reference element and wick are now in the inner tubular member and the antimony sensor is in the outer tubular member. Applicant never disclosed how to do this and one possessing ordinary skill in the art would not have been enabled to construct such a sensor based on the originally filed disclosure.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 1753

14. Claims 1-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

15. Claims 1, 11 and 22-24 all refer to the reference element being in a "proximal" position.

It is unclear what the proximal is referring to. What is this element proximal with respect to?

Clarification is requested.

***Claim Rejections - 35 USC § 103***

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 1-3, 6-9, 11, 12, 15-18, 20 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christner et al (USP 5,346,606) in view of Kleinberg (USP 3,742,594).

18. Christner discloses a sensor for monitoring pH comprising an outer tubular member 24 and an inner tubular member 16 where said inner tubular member is coaxially and collinearly enclosed with the outer tubular member. See fig. 1A. Christner discloses a pH sensor enclosed with the inner tubular member and a reference element 22 enclosed within the outer tubular member and located in presumably a proximal position (see 112 rejection above). Christner further discloses a wick material 12 having one side surrounding and partially engaging the inner tubular member. Said wick extends from the sensor to the reference element, which it is substantially engaged with. Christner further discloses an ion conducting media (i.e. electrolyte)

Art Unit: 1753

retained within the wick material. See fig. 1a and col. 3, l. 67 through col. 4, l. 50. Christner does not explicitly disclose the use of an antimony sensor for the ion sensor. Kleinberg discloses in an alternate sensor that antimony sensors have a number of advantages over the bulb based electrode of Christner including the ability to make smaller, more robust and more stable. See col. 1, ll. 25-45. It would have been obvious to one of ordinary skill in the art at the time the invention was being made to utilize the teaching of Kleinberg for the sensor of Christner so as to make the sensor smaller, more robust and more stable.

19. With respect to the choice of wick material, Christner discloses that Teflon (i.e. PTFE) finds utility for liquid junctions. See col. 1, ll. 31-33.

20. With respect to the choice of reference element, see Christner, col. 1, ll. 12-15.

21. With respect to having the tubular members offset from each other, although Christner does not show this, Christner places no criticality on the two tubes being exactly coaxial with each other. One possessing ordinary skill in the art would recognize that other tube alignments would not have altered the fundamental operation of the sensor. Furthermore, using tube offset from each other would provide greater clearance for positioning for the reference element.

22. With respect to the presence of electrical communications extending to a proximal terminal position, Christner discloses wires 17 and 23 that must extend to a terminal position of the sensor so as to transmit the electrical information.

23. With respect to the wick material and the sensor being positioned at a terminal end of the tubular member, see fig. 1a.

24. With respect to the sensor being of a small mass such that it functions to cool efficiently and subsequently condenses humid gases, this doesn't read free of whatever size the sensor of

Art Unit: 1753

Christner in view of Kleinberg is. Cooling “efficiently” is a relative term that has not been explicitly defined by the applicant and any sensor could be considered to have efficient cooling capabilities. The condensing of humid gases is entirely functional on the environment the sensor is placed into (i.e. how humid the environment was and how cool the sensor was when placed in the humid gas). How the sensor is utilized constitutes the intended use of the apparatus and the intended use need not be given further due consideration in determining patentability.

25. Claims 4, 5, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christner and Kleinberg as set forth for claims 1 and 11 above, and in further view of Leonard.

26. Christner and Kleinberg set forth all the limitations of these claims, but did not explicitly set forth a polysaccharide material or a water based gel for the ion conducting fluid. Leonard teaches in an alternate reference electrode that the addition of cellulose based materials (i.e. polysaccharides) to the ion conducting fluid gels the electrolyte thereby preventing loss of ion conducting fluid from the reference electrode. See col. 5, ll. 14-23. It would have been obvious to one of ordinary skill in the art at the time the invention was being made to utilize the teaching of Leonard for the sensor of Christner and Kleinberg so as to prevent ion conducting fluid loss from the sensor.

27. Claims 10, 19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christner and Kleinberg as applied to claims 1 and 11 above, and further in view of Mosley et al (USP 6,653,842).

28. With respect to claims 10 and 19, the references set forth all the limitations of the claim, but did not explicitly disclose the presence of a display which processes information from the sensor. Mosley discloses in an alternate pH sensor that the data should be subsequently



Art Unit: 1753

processed and displayed for use of the measured data. See col. 10, ll. 1-9 and col. 11, ll. 5-17. It would have been obvious to one of ordinary skill in the art at the time the invention was being made to utilize the teaching of Mosley for the sensor of Christner and Kleinberg so that the collected data can be converted into an appropriate readable pH number useable by the operator of the sensor.

29. With respect to claim 21, Mosley also teaches the use of wireless means of transmitting information. See fig. 5a and col. 13, ll. 4-47.

30. Claims 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christner and Kleinberg as applied to claims 1, 11, 22 and 23 above, and further in view of Glass.

31. The references set forth all the limitations of the claims, but did not explicitly claim a coating on the sensor from the set forth Markush groupings. Glass teaches in an alternate pH sensor that hydrophilic coatings of polyacrylamides facilitate the wetting of the sensor with the sample solution. See col. 12, ll. 8-14. It would have been obvious to one of ordinary skill in the art at the time the invention was being made to utilize the teaching of Glass for the claimed sensor of Christner and Kleinberg so as to ensure the sample sufficiently wets the sensor.

### ***Conclusion***

32. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Brunt and Broadley also teach a relevant outer tube, inner tube, wick configuration relevant to the claims of the instant invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kaj K. Olsen whose telephone number is (571) 272-1344. The

Art Unit: 1753

examiner can normally be reached on Monday through Thursday from 5:30 A.M. to 3:00 P.M. and on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen, can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AU 1753  
September 18, 2005



**KAJ K. OLSEN**  
**PRIMARY EXAMINER**